

**ABSTRACT**

The invention relates to gerotor mechanisms for screw downhole motors used for drilling oil and gas wells, to screw pumps for producing oil and pumping fluids and to general purpose screw motors. The profiles of a rotor (3) and stator (1) are outlined in the end cross section thereof in the form of the envelop of the initial contour of a rack-type tool, which is formed by conjugation of circle arcs when said initial contour of the rack-type tool is run without sliding along corresponding tool circles. The arc radii of the circle arcs of the initial contour are calculated according to determined relations. Said invention makes it possible to improve energy characteristics, increase a life service and producibility, to reduce hydromechanical losses and costs.